





# DAIRY PROJECT

### **QUARTERLY PROGRESS REPORT**

July – September 2015



**Disclaimer:** The views expressed in this publication do not necessarily reflect the views of the U.S. Agency for International Development or the United States Government.

#### Input:

Over **1,313** dairy trainings and awareness classes provided to farmers and extension service providers from rural areas.

About **7,700** rural extension service providers were awarded with start-up kits.

#### **Output:**

Over **39,225** trained beneficiaries making dairy farming sector efficient.

**40** Farm up-graded increasing the contribution towards the dairy sector.

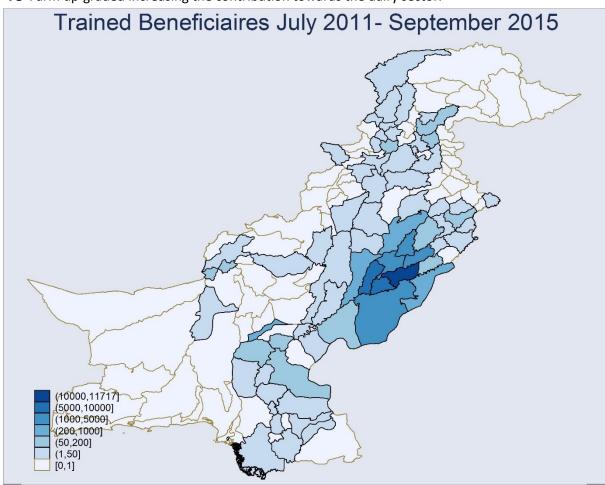


Figure 1 Heat Map of total trained beneficiary

#### Outcome:

**11%** increase in milk yield of dairy animals

73% of the trained farmers adopting more than three best practices for dairy farming

About **7,700** young unemployed men and women established their own business

#### Impact:

Increase in productivity of the dairy sector

WLEWs, AITs and WLEWs-Refresher earning on average PKR. 1,085, PKR. 9,139 and

PKR. 2,457 per month respectively

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#### List of Acronyms

AI Artificial Insemination

AITs Artificial Insemination Technicians
AOR Agreement Officer's Representative

**BOG** Board of Governors

DRDF Dairy and Rural Development Foundation
EMPP Environmental Monitoring Program Plan

FOM Field Operations Manager
FROS Female reproductive organs

**GM** General Manager

**LBEs** Livestock Business Entrepreneurs

LHW Livestock Health Worker

M&E Monitoring and Evaluation

MTs Master Trainers

NGO Non-Governmental Organization

**PD** Project Director

PMU Project Management Unit

SMs Social Mobilizers
TOR Terms of Reference
TOTs Training of Trainers

**UAF** University of Agriculture Faisalabad

**US** United States

**USAID** United States Agency for International Development

**UVAS** University of Veterinary & Animal Sciences

**VTIs** Vocational Training Institutes

WLEWs Women Livestock Extension Workers

#### **Executive Summary**

The Dairy Project is a five year intervention. It is a joint effort of the United States Agency for International Development (USAID), Dairy and Rural Development Foundation (DRDF) and Nestle Pakistan to enhance rural incomes by increasing livestock productivity. The project provided training to 31,011 dairy farmers, including 492 farm managers and commercial dairy farmers, in best dairy farm practices to help them increase milk productivity which will eventually lead to an increase in their income.

Quality dairy extension services were not available to farmers in the area. In order to bridge the gap, the project provided training to 2,168 rural, unemployed young men as Artificial Insemination Technicians (AITs) and 5,556 rural, unemployed young women as Women Livestock Extension Workers (WLEWs) to assist dairy farmers with quality extension services. Once the AITs and WLEWs are trained and certified by the University of Veterinary and Animal Sciences (UVAS), Lahore, the Dairy Project helps in establishing them as entrepreneurs by providing them with startup kits. In the reporting period the project trained 221 WLEWs and established them as intendent entrepreneurs while 142 already trained WLEWs were provided refresher classes. The Dairy Project extended its Altraining to 6 months in compliance with breeding policy. A total of 68 AITs are undertraining at Burj-Attari and Bahawalpur training centers and 70 AITs are in filed at various large farms for their three months apprenticeship.

A survey conducted by M &E team in October, 2015 shows performance of AITs, WLEWs and farmers who were trained in year-4. The focus of survey was on performance of newly established entrepreneurs (AITs and WLEWs) and farmers who received awareness training. According to survey findings, AITs monthly average income is PKR 5,672 and WLEWs monthly average income is PKR 1,032. There is a substantial increase in income of WLEWs who received the refresher course. On average they are earning PKR 2,475 per month. Although the surveyed AITs and WLEWs are recently established entrepreneurs but they are performing well on the ground in providing timely and much needed dairy extension services. It is expected that their earning will increase with the passage of time as the number of farmers and their trust on them will also increase. In farmer component adoption of three or more than three best dairy farming practices is 75%. Farm-upgradation on cost sharing basis is continued in this quarter and until now the project has completed up-gradation of 40 farms while 30 farms are in different phases of up-gradation. Farmers training and access to extension services resulted an increase in 8.1% milk productivity of the farmers including the farmers who received one-day awareness training.

The project launched its mass awareness mobile float campaign with the name "Dairy Laway Khushian de Dheri (Dairy brings happiness to your life)" in which message on the best dairy farming practices was spread out at mass level through street shows theatre. 28 street shows were conducted in vicinity of up-graded farms in both zones Vehari and Bahawalpur in Aug-Sep, 2015. This activity not only helped to spread the awareness on dairy farming in rural traditional farmers but also leveraged the mobilization for one-day training. A total of 12,711 farmers participated in 28 shows.

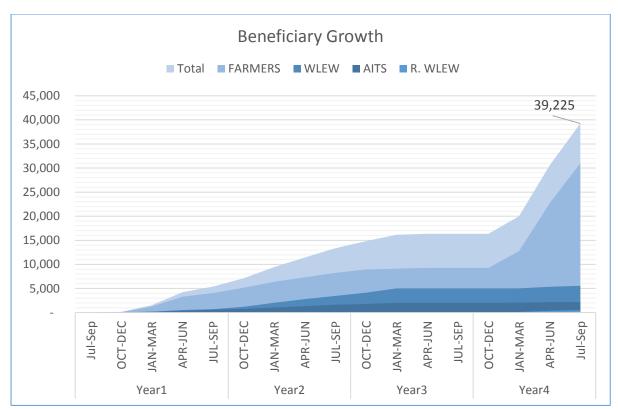


Figure 2 Beneficiary growth from Year-1 to Year-4

### **Aid for Sustainable Development**

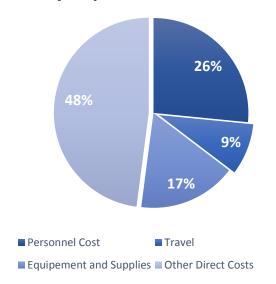
Table 1: Financial Summary

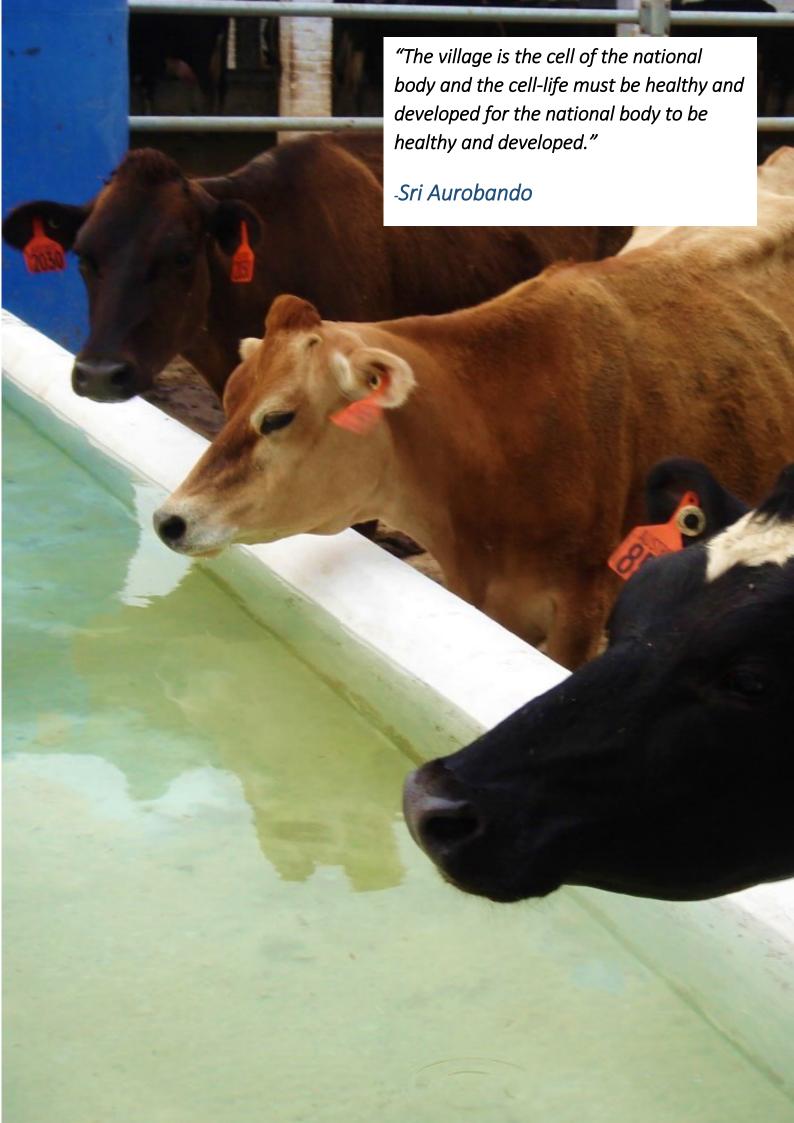
Description	Amount (In USD)
Total Estimated USAID Amount:	21,018,293
Amount Obligated:	20,918,293
Leverage Amount (Non-Federal):	5,108,059
Total Project Funds Expended To Date (End of Sep-2015):	16,980,929
Project Funds Expended During the Reporting Quarter (July-Sep 2015):	921,848
Obligated Project Funds Remaining Available:	4,037,364
Project Funds Allocated for the Next Quarter (Oct-Dec, 2015):	1,066,339

Table 2: Expenditure Summary

Expense Categories Under Cooperative Agreement	Expenditure during Apr-Jun 2015 (US \$)
Personnel Cost	244,862
Travel	80,843
Equipment and Supplies	154,303
Other Direct Costs	441,839
Total	921,847

July-Sep 2015 US\$ 921,847





#### Progress & Performance

### **Marching Forward**

Due to the vital importance of the livestock sector in Pakistan, the Dairy Project, with its extensive training programs for Dairy Farmers, Women Livestock Extension Workers (WLEWs) and Artificial Insemination Technicians (AITs), is playing an important role in transforming livelihoods of rural communities associated with livestock. The project is working with an integrated approach where it is providing training to farmers on best dairy farming practices through up-graded models farms established in their own vicinities and then by filling the gap of extension services for dairy and livestock through increasing the number of trained AITs and WLEWs in the pool of service providers. With this approach the project is marching forward to achieve the set targets.

This progress report describes the operations and progress of the project in the period July 2015 to September 2015. For a detailed overview of the project activities, please refer to annex 1.

#### Farm Up-gradation and Bio gas plants

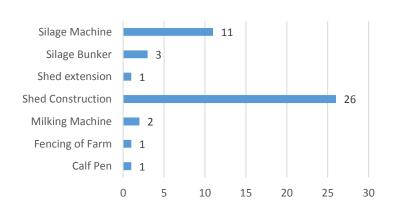
#### Up-graded Village Level Model Farms

The project aims to facilitate 100 small dairy farmers in different village centers, on a cost share basis, to upgrade their existing small farms to model farms at village level. The upgraded farm will facilitate farmers in implementing best dairy farming practices, and these farms will serve as a model for neighboring dairy farmers. By following the selection process the project has selected a total of 89 farms for up-gradation out of which 36 are selected in current reporting period. Construction/upgradation work of 40 has been completed and farms are open for one-day training.

Up-gradation support is mainly categorized as construction/improvement of shed which involves civil-work and mechanization of farm by installing cooling system, milking machine and silage machine. In the process of the farm up-gradation the project has provided/committed a total of PKR. 23,957,723 for 89 farms while farmers contributed/committed a total of PKR. 32,825,918¹. This investment in up-gradation would be first step towards viable commercial dairy farming for small dairy holders. Given below graph shows the overall status of farm up-gradation.

Table 3: Up-gradation Summary

<b>Upgradation Type</b>	Requests
Calf Pen	1
Fencing of Farm	1
Milking Machine	2
Shed Construction	26
Shed extension	1
Silage Bunker	3
Silage Machine	11
<b>Grand Total</b>	45*



<sup>\*</sup>Total up-graded farms are 40 while some farms have more than one up-gradation like silage machine and silage bunker.

<sup>&</sup>lt;sup>1</sup> The contribution of farmer is calculated on the basis of initial feasibility. The figure may increase with the completion of up-gradation work.

In order to make these farms as a viable commercial unit the Dairy Project is providing constant follow-up through its trained staff. They provide advisory services on feeding, vaccination, fodder planning, breeding and animal selection on door step of these up-graded farms. The Dairy Project is also collecting complete data of farm economics which shows production cost with traditional practices is higher than dairy standards. The farm upgradation team is working on economics of each farm and providing helpful solutions to decrease the cost.

Continuous advisory support on herd management, feeding and breeding will help the farmers to reduce the cost of milk production and with the help of artificial insemination have high yielding animals in future. It will help the farmers to run their farm as a viable commercial unit.

#### Bio Gas

Animal nutrition is an essential part of animal health and milk productivity, and fodder is one of the important nutrients for these animals. Cost of production of fodder is a major concern for the farmer. Taking this into account, the Dairy Project aims to shift 10 irrigation tube-wells running on fuel/electricity to manure bio-gas units.

The project is in consultation with different vendors on design and functioning of these bio-gas units around the year. After a series of meeting it is concluded that the suitable herd size for bio-gas unit to run the tube-well is 75-100 animals. The additive advantage of slurry produced will result in an increase in land fertility. The project has received 31 applications against the advertisement. After scrutiny the field team has started to visit the farm physically.



#### Training and Support for Dairy Farmers

Table 4: Number of Farmers Trained and Training Type

Type of Training	Farmers Trained
Two-Day Training	5,118
Four- Day Training	3,749
One Month Training	492
One-Day Training	20,647
Seven-Day Training	1,005
Total	31,011

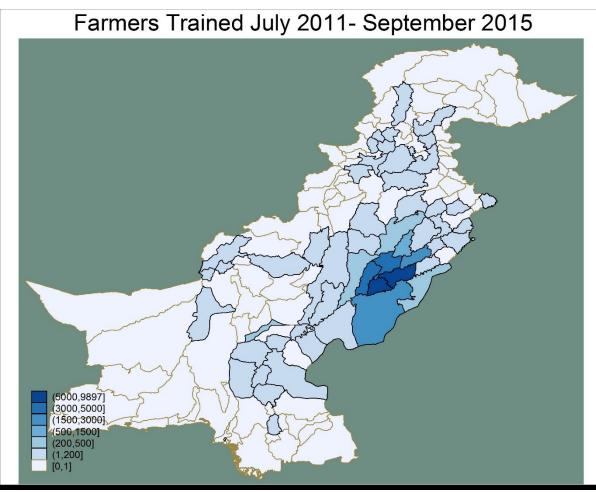


Figure 3 Heat Map of total trained farmers

The project continued its One-Day training on up-graded farms in both zones while Seven-Day trainings were conducted on the Sukheki Nestle Farm and up-graded farms in Bahawalpur and Vehari. A total of 8,305 farmers were trained in the current reporting period. To mobilize these farmers a total of 172 community/corner meetings were conducted by social mobilizers in both zones.

Table 5 Training Targets and Achievement (July-Sep, 2015)

Type of Training	Targets	Achievements	Variance
One - Day Training	8,400	7,860	(540)
Seven - Day Training	375	420	45

Type of Training	Targets	Achievements	Variance
One Month Training for commercial farmers and farm managers	25	25	0
Total	8,800	8,305	(495)

Table 5 below shows the progress on indicators from the Monitoring and Evaluation Activity Plan. These indicators are calculated on the basis of survey conducted by M & E Department in Sep-Oct, 2015. For this purpose, a random sample of farmers trained in phase-2 (Year-4) was selected from the project intervention area.

Table 6 Performance Indicators for Project Trained Farmers

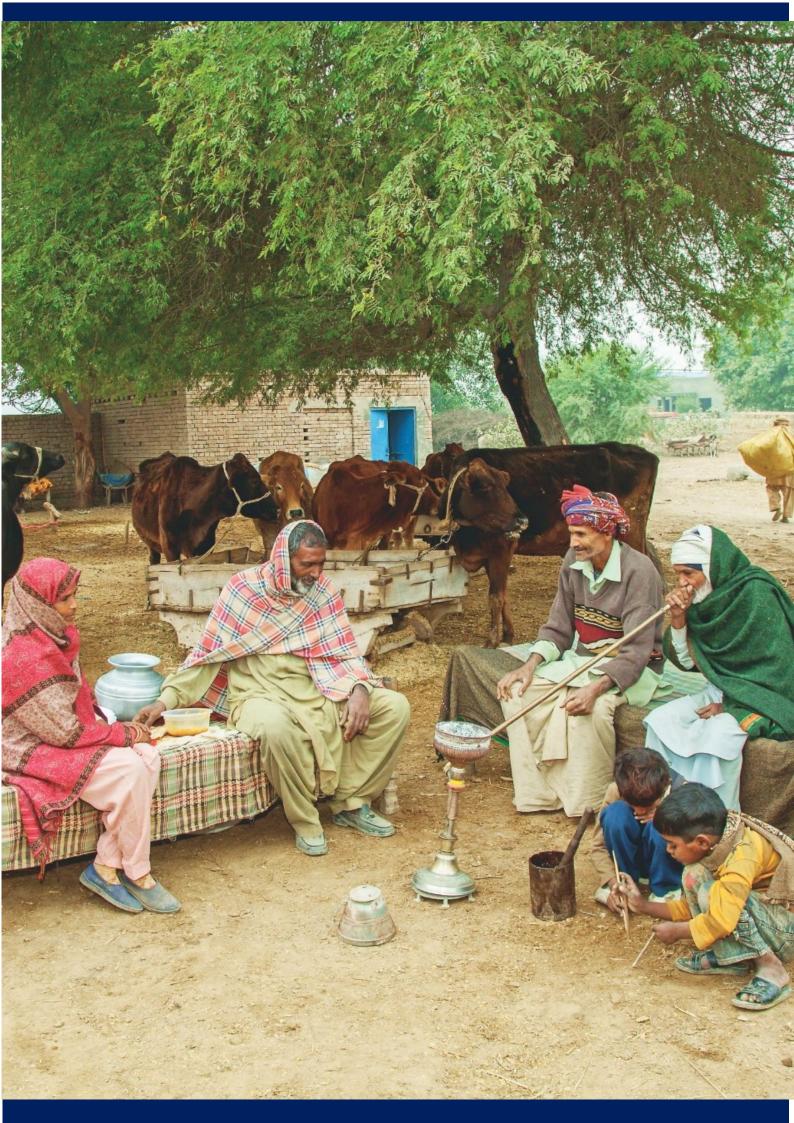
Indicators	Targets	Achievement
Average increase in the project assisted household annual income from dairy activities relative to the baseline*	At least 10 percent increase in the household income from dairy activities.	Reported annually <sup>1</sup>
Percentage of project trained farmers access to extension services provided by project trained WLEWs	At least 20% of project trained farmers using WLEWs services	23%
Percentage of farmers getting vaccination done, for FMD and HS, for their dairy	At least 40 percent of	FMD-87%
animals	Farmers	HS-88%
Percentage increase in milk yield of dairy animals of trained farmers	At least 10 percent increase in milk yield.	8.1%²
Percentage of project-assisted farmers using at least three level 1 best practices relative to the baseline	60 percent farmers adopted three or more level 1 best practices	71%³
Percentage of project-assisted farmers using at least three level 2 best practices relative to the baseline	40 percent farmers adopted three or more level 2 best practices	
Number of villages reached with TV and/or Radio sketches	-	No radio/TV campaign was launched in this year
Number of project-assisted farmers managers trained in business practices, and book-keeping	100 Percent of Farm Managers	100%

Note: 1-As per EGA office memo, the dairy project will report this indicator annually.

The project continued its silage activity even after the last quarter campaign. During this quarter, the project conducted 11 more silage shows covering 53.5 acre of land. About 650 farmers observed these silage shows. The project also facilitated 38 farmers on individual basis by providing machinery and technical support. A total of 141.37 acre of land was covered in this individual support.

<sup>2-</sup> The data is not adjusted for seasonality and also it includes the farmers who received only awareness training for one-day

<sup>3-</sup>Percentage of trained farmers adopting three or more than three best dairy farming practices



#### Training and Support for Artificial Insemination Technicians (AITs)

In the reporting period, mobilization team mobilized one batch of two groups at two training centres namely Burj-Attari and Bhawalpur. These two groups were selected from District Qasur, Bhawlangar, Bhawalpur, Khanewal, Lodhran, Muzafargarh and Lodhran. A total of 70 AITs are under-training at these two training centres. As the training has extended to 6 months, therefore, no AIT graduated in this quarter. Bike validation survey of AITs trained in the month of March-April, 2015 started in month of September, 2015. The graph given below shows the density and geographical coverage of AITs trained by the Dairy Project.

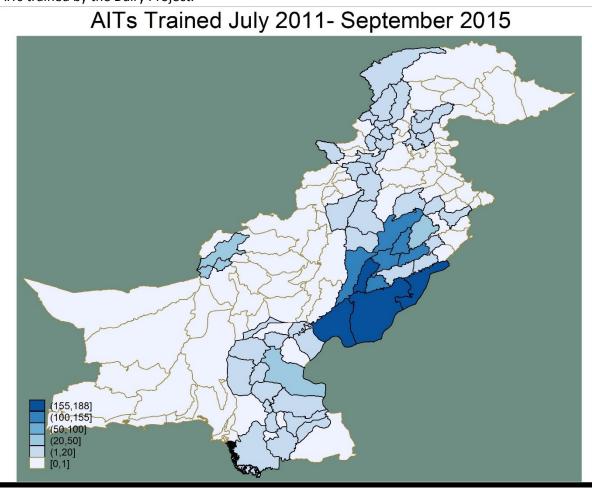


Figure 4 Heat Map of total trained AITs

The table below, shows progress on indicators from the Monitoring and Evaluation Activity Plan, based on the survey conducted by M & E Department in Sep-Oct, 2015. This survey was conducted only of the AITs trained in Year-4.

Table 7 Performance Indicators for Project Trained AITs

Table / Performance mulcators for Project	Tailled Al 13	I
Indicators	Targets	Achievements
Average monthly income of AITs from providing AI services relative to the baseline	Income of at least PKR. 3,000 (US\$ 32) per month	PKR. 5,672
Number of villages served by AITs	On average 4 villages per AIT	7
Number of insemination procedures performed per AIT/ per month	On average 20 insemination per month per AIT	21

Indicators	Targets	Achievements
Number of pregnancy tests performed per AIT per month	On average 20 pregnancy tests done by project trained AITs	19
Conception rate of services provided by project trained AITs	Conception rate of 60%	56%
Percentage of AITs providing their services as insemination technicians	80 percent of AITs	98%
Percentage of imported semen used	At least 20% of the total semen applied/used by an AIT	15.30%
Percentage of AITs attending Follow- up Meetings	At least 70 percent of the AITs attending such meetings	98%
Number of AITs successfully trained in book-keeping and business management	100 percent	100%

Note: 1-Calculated from Bike-Validation Survey

All the above mentioned indicators show a satisfactory performance of these newly project trained AITs. They are earning PKR 5,672 on an average per month with 21 inseminations and 19 pregnancy tests on an average per month.

In the current reporting period, AIT-follow-up team provided follow-up to batch-29. Follow-up team conducted village level induction meetings, in which AITs was introduced to surrounding farmers. A total of 4 induction meeting were conducted in which 238 farmers participated. Follow-up team also conducted 5 monthly meeting in which 107 AITs (80%) participated.

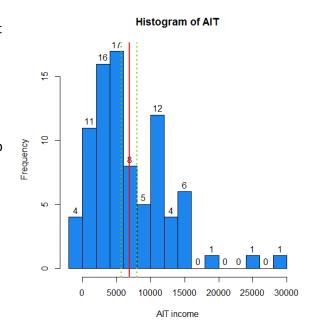


Figure 5 Histogram of the incomes of sampled AITs



#### Training and Support for Women Livestock Extension Workers (WLEWs)

Training of WLEWs is one of the most important components of the project as it not only aims to improve the potential of the livestock sector through better animal health and extension services at the village level, but also helps to empower rural women. Project trained a total of 5,556 WLEWs till Sep 30, 2015. From these WLEWs 490 have also been given refresher trainings to boost up their business and incomes. The geographical coverage and density of WLEWs trained is given in the graph below.

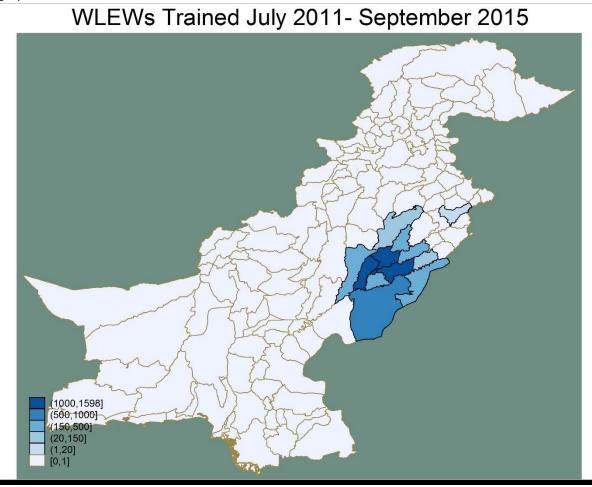


Figure 6 Heat Map of total trained WLEWs

The project continued its WLEW training and refresher training in Vehari and Bahawalpur. In current reporting period the project trained 221 new WLEWs and provided refresher to 142 already trained WLEWs. To mobilize rural women for training, mobilization team conducted 175 community/corner meetings in both zones and a total of 6,246 men and women participated in these meetings. WLEWs selected during mobilization were trained at Project established training centers in their nearby vicinity. The training summary for the reporting period is given below:

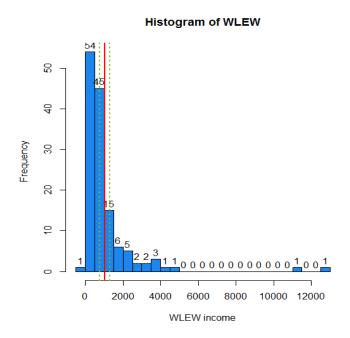
Table 8 Training Targets and Achievement (July-Sep, 2015)

	WLEWs Training		WLEWs Refresher			
Month	Target	Achievements	Variance	Targets	Achievements	Variance
July, 2015	85	92	7	54	41	(13)
August, 2015	80	74	(6)	55	31	(24)
September, 2015	80	55	(25)	55	70	15
<b>Grand Total</b>	245	221	(24)	164	142	(22)

M & E Department conducted survey in Sep-Oct, 2015 using structured instruments to measure the performance of project trained WLEWs. The salient results of performance indicators are given in below table:

Table 9 WLEW Performance Indicators

Indicators	Targets	Trained in Year-4	WLEWs Refresher
Average monthly income of WLEWs from livestock services relative to the baseline	Income of at least PKR. 2,000 per month	PKR. 1,032	PKR. 2,457
Average number of cases done by trained WLEWs	On average 30 cases per month per WLEW	28	50
Number of villages served by the WLEWs	On average 1 village per WLEW	2	2
Number of project-trained WLEWs providing services as self-employed extension workers	At least 60 percent of the trained WLEWs providing services	97%	93%
Number of WLEWs operating / managing project-supported milk collection points in project-assisted communities	At least 20 milk collection points (LOP Target)		16
Number of the WLEWs trained in business practices and book-keeping.	100 percent of the WLEWs		100%



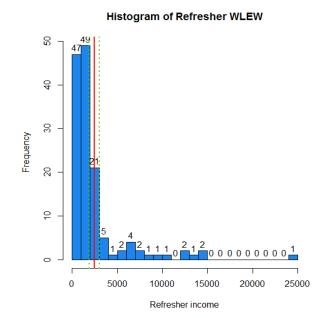


Figure 8 Histogram of incomes of sampled WLEWs

Figure 7 Histogram of incomes of sampled Refresher WLEWs

To work with rural women community is very difficult as there are many social and cultural constraints for women to work. Under these circumstances, it is a real challenge for the project to train rural women and establish them as a reliable extension service provider . With these circumstance the project trained WLEWs to provide basic extension services and these newly trained

WLEWs are on average earning PKR. 1,032 per month with an average 28 cases dealt per month. Although, the earning of WLEWs is not high enough but they are present in rural communities to serve the surrounding farmers. On average they are covering 2 nearby villages/bastis. The project has also made effort to train master trainer on gender sensitization and gender equity and they are further transferring this knowledge to WLEWs by making lectures on gender sensitization as integral part of training. This will help the WLEWs to overcome the issues related to social constraints and gender.

The project has also strategized in its fourth year work plan to boost the income of already trained WLEWs by providing them refresher/advanced course, hence increasing the knowledge base and skills set. This effort result into an increase in income of WLEWs trained in first phase of the project (July 2011- July 2014). According to our recent survey these women are earning PKR. 2,457 per month with an average of 28 cases per month. As per our previous quarterly survey which was conducted in January, 2015, the income of WLEWs trained in first phase was PKR 1,091. The income stats show a significant impact of refresher course on the earning of WLEWs.

The project is also looking to make liaisons with other initiatives and development bodies who are currently working—or planning to work—for the empowerment of women. This will result in a good learning activity for both the parties since the joint planning of interventions will produce more effective and efficient results. Another opportunity to expand the work of the WLEWs is to introduce them to the beef market and create linkages with market input suppliers. In this way, WLEWs will be able to expand their work and sources of income.

In the current reporting period, follow-up team provided follow-up to batch-22 and batch-23 of newly trained WLEWs and batch 4, batch-7 and batch-8 of refresher course. A total of 45 follow-up meeting were conducted by follow-up team in which 292 WLEWs participated in these meeting. To introduce the trained WLEWs as a reliable extension worker, WLEWs follow-up team conducted 75 induction meetings, in which 4,202 local farmers were briefed about the rigorous training of WLEWs and her capacity to treat their animals. To give a practical training on live animals the project also organized farmer help camps where the trainees treated animals under the supervision of master trainers. A total of 76 farmers help camps were organized and 5779 cases were dealt by trainees.



### Other life of project targets

Table 10 Other LOP targets

<b>Progress Indicators</b>	LOP Target	Progress
Number of subsidized sexed semen provided to farmers	2014-15: 7,000 2015-16: 3,000	In discussion in lieu of new breeding act
Number of new clusters formed	100 clusters	Clusters <sup>1</sup> were reshaped in Vehari while new cluster were formed in Bahwalpur
Number of suppliers introduced to clusters	At least 10 suppliers introduced	Two or more suppliers were introduced in every help camp
Number of follow up meeting conducted	250 scheduled meetings	250
Number of inter-beneficiary meetings conducted	100 meetings to be conducted (LOP Target)	Will start in next quarter
Number of farmers reached through media campaign	2014-15: 500,000 farmers 2015-16: 500,000 farmers	From Newspaper: 800,000 From mobile float and other products: Approx. 600,000
Number of media/mass awareness products developed by communication department	At least 10 products (LOP Target)	07
Number of Silage shows conducted with average 2 acreage of land covered per show	2014-15: 80 shows 2015-16: 80 shows	88 shows
Number of farmers observed silage shows	On average 100 farmers in a silage show	51 farmers

Note: 1-Cluster is geographical demarcation of area for faciliation of opreations.

#### Communication, Awareness Campaign and Other Activities:

- a) Provided support in the production and designing of training and marketing materials--
- b) brochures (Naveed-e-Subah, AIT, Dairy Farmer, WLEW), flip charts, flex streamers, One-Month Farm Manager Dairy Guide, WLEW Refresher Module, flyers, One day farmer training certificate, One-day farmer Module and AIT module, WLEW and farmer banners, AIT record register and envelopes.
- c) Provided support to draft and release project advertisements including job opportunities, including request for technical and financial proposal for audit firms and job opportunities.
- d) The Donors Conference Report was compiled and shared with project management. The final report was shared with USAID DOCs for final approval, and thereafter will be shared with the key participants and guest speakers.
- e) On July 30, 2015, the USAID DRDF Dairy Project Communications Team participated in USAID's Communication Working Group (CWG) meeting hosted by Training for Pakistan Project in Islamabad. Based on the successful roll-out of several community and outreach efforts in the month of June-July, 2015, the team decided to contend for the Project of the Month competition. Three contending projects including Training for Pakistan Project, Small Grants and Ambassador's Fund and Dairy Project gave a brief overview of their activities for the month of June-July. Dairy Project team presented and competed very well and were the runner-ups –losing out by only two votes
- f) USAID DRDF Dairy Project Corporate Documentary was reviewed and finalized. The DVD stickers/labels are designed and in the process of production.
- g) The website maintenance, customization and revision activity was completed in September. As per the agreement, the Dairy Project components, facts & figures, success stories, messages, pictures and videos were updated and revised.
- h) Terms of reference for a full page newspaper supplement are developed and the procurement process is initiated for design and release of the supplement, in three newspapers of Lahore and Multan to introduce the Dairy Project, its training interventions, achievements and commitments to the masses. Furthermore, it will also include highlights of USAID-sponsored second Dairy and Livestock Donors' Conference on June 16, 2015.
- i) Rollout of Street Shows activity, as planned in the month of September, in project targeted areas. The basic objective of this activity is to help ensure effective outreach to dairy farmers for increased awareness on Dairy Project's interventions, reinforcing community mobilization, trainee selection process and sensitizing farmers about training programs offered by Dairy project. Target audiences for this campaign are small, medium, and large dairy farmers, including rural women, school children etc. This is a regional campaign of 44 shows, targeting dairy farming communities of Districts Multan, Vehari, Bahawalpur, Khanewal and Lodhran. So far we have conducted 28 shows, with an approximate outreach of 12,700.

- j) Dairy Project Portal, Volume 3-Issue 2 has been finalized and approved by the Project Management. Its dissemination will take place at the start of October.
- k) Dairy & Rural Development Foundation (DRDF) and COMSATS, Sahiwal, signed a Memorandum of Association (MoU) on September 10, 2015. Along with the MoU ceremony, a certificate distribution ceremony for the first batch of Dairy Project master trainers was also organized. The Communications Team provided support for the efficient roll-out of MOU signing. Press release for the event was published in 7 English and 17 Urdu national and regional newspapers. The complete Media Coverage Report for the MoU signing has been shared with Project Management and uploaded on the project website.

Communications Team has begun brainstorming for the Dairy Project's Diary and Calendar 2016, and drafted a work plan which has been shared with the Project Management



#### **Annexures:**

#### Annex 1: Project Overview

The Dairy Project is a joint effort of the Dairy and Rural Development Foundation (DRDF), the United States Agency for International Development (USAID) and Nestle Pakistan to foster sustainable increase in dairy and livestock productivity through adoption of best dairy farming practices, breed improvement, availability of timely extension services, and promotion of livestock businesses. The Dairy Project is being implemented in all four provinces, with a major focus on Punjab with a time frame of five years (July 2011- October 2016). The project contributes to the USAID's strategic objective of creating job opportunities and increasing income. The project objectives are aligned with Pakistan's development agenda, and its goal and objectives reflect national and regional priorities.

#### Farm up gradation and Bio gas plants

The first objective of the cost shared basis farm-up gradation is to provide an on-the-ground model for small dairy holders at village level, where they could observe the best dairy farming practices that are being implemented. Secondly, since access to the large mega farms for all small dairy farmers in a village is not possible, the universal training coverage is achieved by up-grading these farms and providing training access for the village and the surrounding area. Thirdly, these up-graded model farms serve as a meeting point and input supply hub for project-trained beneficiaries. The project aims to upgrade 100 farms with herd size of 5-25 dairy animals over the project life. Animal nutrition is an essential part of animal health and milk productivity, and fodder is one of the important nutrients for these animals. Cost of production of fodder is a major concern for the farmer. The objective of establishing bio-gas plants is to shift irrigation tube-wells running on fuel/electricity to manure bio-gas units. The slurry produced from these bio gas units will also improve the fertility of the land which is another benefit accrued to the farmer. The project aims to develop such 5 bio-gas units during its extension phase.

#### Training and Support for Dairy Farmers

The primary objective of providing training and support to dairy farmers is to improve prevalent dairy farming practices for improving livestock productivity and enhancing incomes of rural households assisted by the Dairy Project. The project aims to train 48,600 progressive farmers and 500 commercial farmers and farm managers. From these, 800 farmers from Khyber Pakhtunkhwa, Sindh and Baluchistan are encouraged to attend the project's training courses in Punjab. These trainings cover several topics, including improved feeding and animal nutrition, importance of improved breeds, basic animal health, and farm equipment and shed management. Training for farm managers include separate components on basic book-keeping and business skills. Knowledge of basic business know-how adds to the skills of farm managers. Consequently, all trained farmers have a better understanding of the milk value chain and they know how to profitably create linkages within it.

Classroom trainings are being conducted at model dairy farms, where modern dairy farmmanagement techniques are implemented. After successful completion of the training course, participants are provided with basic equipment kit that helps them to put into practice the newly learnt farming practices. Trained farmers are visited frequently for support and follow up.

Training and Support for Artificial Insemination Technicians (AITs)
The objective of AI training is to improve the provision of AI services to foster good quality breeds that will improve livestock productivity and enhance income of rural youth. Under this component, 3,000 young individuals from rural Punjab, from which 300 from Khyber Pakhtunkhwa, Sindh and

Baluchistan will be supported in attending the project's AI training courses in Punjab. AITs receive five weeks of training with two months follow up support. Trainings include a mix of theory, demonstration and practical exercises related to insemination, safe handling and maintenance of insemination guns, liquid nitrogen cylinders for transporting semen and other equipment. Classroom trainings take place at AIT Centers, established by the Dairy Project, and the Government of Punjab's Vocational Training Institute (PVTI).

Each AIT receives initial support to establish him as an entrepreneur. This support includes an AIT kit (including Nitrogen Cylinders, Semen, Semen Straws, and basic AI related equipment). A motorbike is also provided upon meeting certain performance criteria.

Training and Support for Women Livestock Extension Workers (WLEWs)
The objective of this component is to increase the use and availability of livestock services provided by WLEWs for improving livestock productivity and enhancing income of rural females. Under this component, 6,000 WLEWs will be trained out of which 1,000 will receive refresher and advance training course. WLEWs receive one-month training on basic animal health management, basic preventive animal health measure, identification of the most common diseases, immunization, basic treatment, animal nutrition and animal hygiene. The curriculum is updated in collaboration with University of Veterinary and Animal Sciences (UVAS). WLEWs are also trained in feed supply and milk collection to give them the expertise to further grow their businesses. They also receive training in book-keeping and business skills as well as how to develop linkages with service (including financial) and input suppliers along the dairy value chain.

Extension worker trainings are conducted in village clusters, so that women can attend training near their homes. A training camp is set up on a temporary basis at each site. The project arranges for transport to and from the site. All master trainers are women veterinary graduates. The program is certified by the University of Veterinary and Animal Sciences (UVAS).

Upon completion of the course, WLEWs selected for animal nursing are given a veterinary kit, while WLEWs doing concentrate business are supported by a stock of animal feed. The program also provides workers with basic mobile phones to enable easy communication with clients and input suppliers.

#### Awareness Campaign

The overall objective of the Dairy Project's mass awareness campaign is to increase awareness about the best dairy farming practices with a focus to improve livestock productivity in Pakistan. Under this component, TV, radio and print infomercials, on subjects such as de-worming, vaccination, mastitis control, breeding, and feeding practices, are being developed. The awareness campaigns through TV, radio and print media are to be aired in about 2,000 villages' across Punjab and other provinces. Farmer days and silage-making days are organized to motivate farmers to adopt improved animal husbandry practices.

#### Annex 2: Environmental Compliance

#### INTRODUCTION

Environmental Team of the Dairy Project monitors operational processes to ensure the compliance with health, safety and environmental guidelines. The team developed various guidelines on these standards and conducted staff trainings. It focuses on adoption of best management practices, health and safety measures related to semen, liquid nitrogen gas and handling of organs. Moreover, it also ensures proper disposal of waste such as semen straws, sheaths, empty medicine bottles and syringes. Bio-security measures at up-graded model farms is another area of focus.

#### REPORT ON COMPLIANCE

This report is for period July-September, 2015. Environmental Team used methodology of physical inspection of sites, visit to class rooms and interviews of trainees to compile this report. Componentwise findings of this report are given in subsequent sections.

#### Component 1: Farmer Training

#### One-Day Training:

A module on environmental awareness in One-day farmer trainings' curriculum includes bio-security measures at the farm, milk hygiene, milk quality test, personal safety, appropriate feed storage to ensure the maintenance of the concentrate feed quality and general hygiene at the farm. In addition to this, knowledge was imparted to the beneficiaries about the quarantine period for new animals at the farm.

Environmental officers carried out visits at the training center to observe and monitor the training on best environmental practices. Compliance with guidelines was observed at most of the training centers; however, there were few training centers which had some issues. All such issues were timely reported to field operations team. The following are the issues reported:

Table 11 Environmental issues observed – One-day Training

Issues	Detail of Training Centre	Status
Lime tray & surf test kit was absent at farms	<ul> <li>Peer Boghey Shah</li> <li>341-WB</li> <li>369- WB</li> <li>HaChah Hameed Wala</li> <li>Allah Hoo Dairy farm</li> </ul>	Meanwhile bricks tray and simple cups are used as replacement of these two things
Water troughs were contaminated with Algae	• Allah Hoo Dairy Farm at Hasil Pur	Need special attention from field staff on this farm
Physical demonstration of different practices like teat dipping, surf test was not done	• At Hamid Nawaz Farm located at 66-DB, Yazman District Bahawalpur.	Issue has been discussed with field management and they have assured to resolve the issue.
Very poor sanitation condition at farm throughout the month	Allah Hoo Dairy Farm located at Hasil Pur	The farm where trainees have to visit should be cleaned properly on daily basis to show them the practices of a model farm

Issues	<b>Detail of Training Centre</b>	Status
Feeding table was used as	• At 341-WB	Instructed field team to take
training class room for one		this practice into account for
day farmers consequently		future.
contaminating the feed of the		
animals.		

#### Seven-Day Training:

Seven-day and one-month farmer training module on environment is much comprehensive as compared to one-day training. It contains safety measures like treatment stall or restraining methods for pregnancy examination, vaccination, medication, deworming, and artificial insemination. Teat sanitization, organoleptic and surf test are well described to check the milk quality so that milk from the infected animal could be separated. Safety measures like dust mask usage, safety guard importance and maintenance of the silage machine for silage shows are being taught to the trainees.

In farmer trainings, farmers/farm managers are being briefed on how to handle manure and utilize in their farm field after fermentation as fermentation reduces the pathogens significantly as well as make nutrients readily usable by the soil consequently enhancing soil fertility.

Significance of appropriate storage of concentrate feed is also demonstrated and described to the farmers so that they could maintain the quality of feed because moisture from the ground surface and side walls can result in aflatoxins in the feed which is carcinogenic material.

As a whole seven day training was very satisfactory and level of training was well up to the mark. Very few issues like provision of basic welfare facility at some site were not there which are mentioned as below.

Table 12 Environmental issue observed – Seven-Day Training

Issue	Detail of Training Centre	Status
Training was carried out under the trees as there was no a lot of suffocation in the room due absence of cross ventilation used for training	●Rao Azam Farm at Moza Talhar, Hasilpur	Preferably, such room for seven day training should be selected in future where cross ventilation system is better.
Washroom at center was not functional	●Rao Azam Farm at Moza Talhar, Hasilpur	Instruction has been given to field teams.
Lime tray was absent at farms	<ul><li>Rao Azam Farm at Moza Talhar, Hasilpur</li><li>Rao Amir farm</li></ul>	Should be arranged as soon as possible.
Sanitation condition was not much appreciable at farm throughout the training	• Rao Azam farm	Field management has been instructed to take care of the sanitation for future.

#### Up-graded Model Farm:

Environmental mitigations are adopted at upgraded farms so that trainees could be demonstrated and awareness could be created about best environmental practices. Trainees can visualize and better understand the practices and implement these value adding practices at their farms as well. Baseline condition at the proposed upgraded farm at the start was not very much appreciable, however, with Dairy Project's intervention and training, there was significance improvement in terms of drinking water quality, milk hygiene, bio-security measures, disposal of waste, health and safety measures at the upgraded farm. Issues are shared on regular basis with field staff in case of non-compliance and well addressed in due course of time which helped to improve the compliance. During the site selection for upgraded model farms, certain criteria were established to avoid frequent ponding as it causes diseases. Furthermore, a year round supply of clean drinking water and construction of water channels for liquid manure handling in case of shed construction was ensured. Following are issues observed in this reporting period relating to this component.

Table 13 Environmental issues observed - Farm-upgradation

Issues	<b>Detail of Training Centre</b>	Status
Construction material is present on feeding table like cement and sand while animals are also moving on the feeding table	Capt. Asmat Farm	Wherever construction is in progress, animal should not be under the shed and construction material should not be mixed on feeding table.
Electrical wire was passing at very low height and very close to up-graded farm	<ul> <li>Sheikh Dildar Hussain</li> <li>Farm at Moza Rajapur,</li> <li>Lodhran</li> <li>471 EB</li> </ul>	Electrical wire can become serious safety hazard so it should be shifted at safe distance without any delay in doing so
Tree Cutting at farms	139 DB 73WB	Trees have been planted as per guidelines against tree cut at 139DB whereas 73WB is pending, and will be planted soon.
Child labor	Basti Sarayan, Bahawalpur Chah dewan wala	Resolved
Ponding at the farms were observed	66 DB Yazman 12MR	Issue has been resolved by consultation with the farmer

#### Component 2: Artificial Insemination Technicians' Training

All of the Artificial Insemination Technicians (AITs) sites are imparting training on best practices and lesson plan covers best artificial insemination practices.

All All trainees wear Dangri (overalls), gum boots and gloves during practical training on live animals to minimize the chances of disease transfer to human beings. Master trainers have been instructed not to use the same glove which has already been used for another animal

Organs are stored inside refrigerator in enclosed container to inhibit the bacterial growth so that pathogens are not spread in the environment after usage. Either crush or restraining is used to control the animals during live animal practice to prevent the injuries during insemination practice. Instructions are given to use personal protective equipment, such as, safety goggles and cryogenic gloves. Sheaths and contaminated polythene gloves are kept covered in dust bin at site till further disposal so that pathogens do not spread in the environment.

Organs are disposed of inside limed pit for biodegradation and safe disposal. Lime is utilized for the disinfection purpose at Bahawalpur site however, to ease the process and to improve the efficiency of the process; heat treatment prior to the ultimate disposal in the land has been introduced at Burj Attari site for organs disposal. After heat treatment, organs are converted into municipal solid waste and so could be easily disposed of along with city waste management system.

Table 14 Environmental issues observed - AIT Training

Issues Observed	Mitigation Measures Proposed
Restraining of Animal is not done properly	This is a serious safety hazard and restraining should be done before practicing AI on animals.
Same air masks are used repeatedly	Everyone should use their own masks and it should be replaced with new one after regular intervals.

#### Component 3: Women Livestock Extension Worker (WLEW) Training

WLEW training takes place at designated training centers in two districts namely, Bahawalpur and Vehari. Best basic livestock extension practices are taught to the WLEWs and health safety measures like handling of medicines and syringes have been incorporated in training content.

Environmental awareness sessions are conducted for each batch of WLEW's and gives relevant knowledge to the project beneficiaries about handling medicines, concentrate feed storage and appropriate disposal methods of syringes and empty medicine bottles etc.

Medicines are protected from the sunlight during outdoor sessions by use of kit bag thereby complying with the product specifications. Moreover, expiry date is checked before use of medicines at both sites which eliminates the chances of expired medicine usage. Furthermore, environment officer also perform quarterly stock checking to see that material and medicines are stored appropriately and to verify the medicines expiry date. Medicines expiry date is quiet far and found to be fine.

Furthermore, Safety, Health and Environment (SHE) officers have also inspected the medicines stock present at sites for the expiry date and all the medicines are found to be well ahead of their expiry date.

Recapping needle enhances the chances of needle prick injuries as well as zoonotic diseases occurring as a result so these practices are avoided. Hands are washed with soap after conducting surgery of an animal.

Moreover, restraining methods have also been taught to the WLEWs so that they could prevent any possible injury from the animals during treatment.

Needle cutters were available on both sites for immediate disposal of needles after injection so that chances of needle prick injuries are minimized.

The following issues related to the compliance need attention from management.

- 1- Environmental module was not provided to WLEWS of last batch.
- 2- Needles were not disposed of as per SHE department instructions.
- 3- WLEWs were handling the needles of used syringes very carelessly, they were not aware of any safety measure. These needles should never be handled directly by hand.
- 4- WLEWs were injecting different animals with same syringe repeatedly. This practice can transfer disease from one infected animal to other animals.
- 5- All the WLEWs were not using syringe cutter and neither they were using cap of needle, this practice can cause needle prick injury.
- 6- WLEWs were not using gloves during treatment and this practice can transfer infection from animals to human body.
- 7- There was no arrangement of washing hands after treatment of animals at field camp and this practice can transfer infection from animals to human body.

Such practices are serious Safety and Health Hazard for human beings as well as animals. So we have to assure that whenever WLEWs go into field, they work in compliance with SOPs documented by Safety, Health & Environment Department.

#### WAY-FORWARD AND CONCLUSION:

By and large, Dairy Project is observing compliance in most of its activities. However, there were some instances, where improvement was required. In such cases, necessary directions have been given to Operations Department for remedial measures.

Dairy project believes in continual improvement and efforts will be made to improve the environmental conditions even further in coming days ahead in coming activities like construction of bio-gas plants.

#### Annex 3: Performance Evaluation Sampling Strategy

The primary objective of the evaluation activity conducted in October 2015 was to get a reliable indicator of the project's performance in three components vis-à-vis farmer, AIT and WLEWs trainings. Given logistical and financial constraints, it was not possible to cover all districts from where the Dairy Project has trained beneficiaries. Therefore, for sampling purposes, the districts from where majority of the beneficiaries are trained are considered. The evaluators make sure that the population considered for sampling is above 80 percent of the total population of trained beneficiaries, which is viable and a good representative of the population.

For sampling purposes, proper statistical methods were adopted to determine the sample size for the survey. Following is a detail method for computing the sample size of each type of component.

#### 1 day and 7 day farmers:

90% of the farmers trained in 1 day and 7 day farmers training were from four districts, namely Vehari, Lodhran, Multan and Bahawalpur. Hence due to limitation mentioned above the sampling was kept limited to these four districts.

A simple random sampling technique was followed to sample a total of 373 famers. The sample number was computed using the widely used online MACORR sample size calculator (<a href="http://www.macorr.com/sample-size-calculator.htm">http://www.macorr.com/sample-size-calculator.htm</a>). Confidence Level of 95% and confidence interval of 5% was kept for computing the sample size of this population.

#### **AITs**

AITs trained by the project are not limited to the regional coverage of the zonal field office. Hence in Phase 2 the project has trained AITs from central Punjab which include Jhang, Chiniot, Faisalabad and Vehari. For sampling purpose all of the beneficiaries were considered and as the spread of the sample was wide geographically, a separate team was assigned to collect data from Beneficiaries sampled from Jhang, Faisalabad and Chiniot region. A sample of 91 AITs was computed keeping 90% confidence level and 5% confidence interval.

#### WLEW (New/Refresher)

Around 94% of the new trained WLEWs in the phase 2 are trained from Bahawalpur and Lodhran. To keep the districts in line with the ones selected for farmers training, it was decided by the evaluator to sample the newly trained WLEWs from these 2 districts and as the percentage of trained beneficiaries from these 2 districts is above 80% the sample would remain representative of all the newly trained WLEWs in phase 2.

Simple random sampling technique was followed to sample a total of 148 WLEWs. Confidence level of 90% and confidence interval of 5% was kept while computing the sample size using the sample size calculator.

#### WLEW (Refresher)

For WLEWs who went under refresher training through DRDF, district Vehari and Multan were selected. Majority of the WLEWs (86%) trained in Phase 1 of the project were given refresher/advance training from these 2 districts. Simple random sampling technique was followed with the sampling level and interval used for sampling New WLEWs and sample of 153 beneficiaries was computed.

#### Survey Methodology:

Survey tools are designed in accordance with the project's key outcome indicators illustrated in Monitoring and Evaluation (M&E) Activity Plan. Keeping in view the experiences from the past quarterly surveys, survey tools are refined and necessary questions were added to gather more insights into the impacts of trainings provided by Dairy Project. Enumerators' training is an essential

part of quality data fetching. A complete training session was organized in Vehari and Bahawalpur for all the enumerators conducting the survey. Enumerators were introduced to the probing methods and all research instruments were briefed one by one. After complete orientation on probing techniques and survey instruments, mock sessions were held which were observed and later on, trainers provided their feedback on mock sessions one by one.

After the finalization of questionnaire and providing required briefing to the enumerators, a pilot survey was carried out in both the regions. This not only refined the tool even further, but also helped the enumerators to get first-hand experience. After successful pilot testing and planning, the survey was carried out in Vehari and Bahawalpur.

To ensure the quality of data, M & E implements a comprehensive monitoring plan with the help of M & E zonal staff. M & E officers make random checks on the interview sessions carried out by the enumerators to ensure accuracy of the data collected. Complete data flow procedures are documented with all the data quality and verification checks explicitly mentioned. After receiving the questionnaires from the enumerators and before entering it to the database, the data is verified by Monitoring and Evaluation Officer and Assistant Zonal Manager at two different stages to ensure the quality and accuracy of data. Even though the data is received after rigorous checking, the analyst further cleans it and checks for errors and outliers to have a refined data set for analysis. Initially, data is analyzed by generating explanatory graphs and doing cross tabulations, to get a better understanding of the facts and figures provided in data. Afterwards, important ratios and percentages are computed against the performance indicators to calculate project's success rate in comparison to the targets.



## SUCCESS STORY

## A Farmer's Commitment Pays Off

The Dairy Project is providing trainings targeted towards Farm Managers with the aim of establishing them as fully-trained, skilled farm managers who will be able to manage large commercial dairy farms.



"I hope to expand my farm and build on the success I have achieved so far thanks to the USAID – DRDF Dairy Project."

Hamid Nawaz Basra, Farm Manager & Owner 66DB, Tehsil Yazman, District Bahawalpur

27 year old Hamid Nawaz Basra, is an ambitious and progressive farmer who lives at 66DB, Tehsil Yazman, District Bahawalpur. He saw the advertisement in newspaper about technical and financial support by the USAID – DRDF Dairy Project regarding farm upgradation and applied for it.

In February, 2015, Hamid was able to construct a shed at his farm with the support of the Dairy Project. At his farm, Dairy Project's Master Trainers have trained 788 farmers in one-day training sessions and 25 farmers in 7-day training sessions from nearby villages.

"I learnt that animals' health and production is better now after providing them shelter and free access to water", says Hamid.

The Dairy Project is providing trainings targeted towards Farm Managers with the aim of establishing them as fully-trained, skilled farm managers who will be able to manage large commercial dairy farms. As of September 2015, more than 444 Farm managers have been trained with the aim of establishing them as fully-trained, skilled farm managers who will be able to manage large commercial farms. These farm managers earn between PKR 25,000 to PKR 40,000 (\$250 - \$400) per month.

The Project technical team also guides Hamid in the record keeping and the calculation of economic data to make his farm profitable.

"I realize that my shed has become a source of inspiration for many farmers in my community. With the help of the Dairy Project, I have acquired new dairy farming skills and techniques and improved my farm by constructing a shed. I hope to expand my farm and build on the success I have achieved so far thanks to the USAID – DRDF Dairy Project," says Hamid.



## SUCCESS STORY

## Training Marginalized Rural Woman

USAID – DRDF Dairy Project improves livestock productivity and incomes of rural women by training them as Women Livestock Extension Workers.



"I received Dairy Project's fifteen-day refresher training which helped me get advanced techniques on animal health and management. With this, I have earned a profit of Rs.24500 in the month of May and able to send my children to school."

Sajeela Bibi 100/15 L, Tehsil & District Khanewal Sajeela was introduced to the Dairy Project through Project's social mobilizer team. She began the training program and passed her UVAS exam successfully.

The United States Agency for International Development (USAID) and Dairy and Rural Development Foundation (DRDF) through their Dairy Project are providing trainings to women from Punjab's rural communities to become livestock extension workers.

With the learning of new skills and techniques, such as animal vaccination, deworming, animal health management, importance of nutrition and vaccinations against diseases, Sajeela is able to give livestock services to her village.

"I am an educated woman but sitting idly at home bothered me. I wanted to do something productive for my village. I constructed my house and financed my children's education from the profits earned", shared Sajeela.

The project aims to train 7,000 WLEWs, which includes refresher/advanced training for 1,000 women. As of September 2015, 6,046 women have been trained in basic animal husbandry and livestock management. These WLEWs are providing extension services to dairy farmers in more than 4,000 villages with estimated earnings of PKR 1,091/- (\$11) per month. Project-trained WLEWs acquire new skills such as animal vaccination, deworming, animal health management, importance of nutrition and Mastitis control and treatment.

"I received Dairy Project's fifteen-day refresher training which helped me get advanced techniques on animal health and management. With this, I have earned a profit of Rs.24500 in the month of May and able to send my children to school", she says



### **SUCCESS STORY**

### **Expanding Horizons**

USAID-DRDF Dairy Project trains AITs to provide dairy breed improvement services across Punjab



"I have inseminated about 200 animals out of which around 130 animals have conceived. Total conception rate is about 65 percent. USAID-DRDF Dairy Project's AI Training has given me a steady source of income; I earn a profit of PKR 29,000, on an average, per month."

Khawar Masood, Artificial Insemination Technician, near civil hospital, Chak no 100WB,p/o Ghara Moor, Tehsil Mailsi, District Vehari. Unemployed, Khawar Masood, was uncertain about his life, until he was selected for USAID-DRDF Dairy Project's Artificial Insemination Training Program. It all began in February 2013, when he had an exciting opportunity to learn new skills and earn a reasonable income as an Artificial Insemination Technician (AIT).

The Dairy Project's Al trainings are empowering unemployed rural youth to become trained Artificial Insemination Technicians (AITs) for dairy breed improvement and kick start their businesses as small-scale entrepreneurs.

"The AIT training program is a blend of both, 30 percent theory and 70 percent practice. We are taught detecting an animal's heat, rod passing to artificially inseminate the animal, conducting accurate pregnancy tests and other breeding techniques," says Khawar.

Followed by hands on training, AITS are examined and certified by University of Veterinary and Animal Sciences, Lahore (UVAS). In order to facilitate trainees' initial business needs, they are provided with support kits. Upon successful performance criteria, they are awarded with motorbikes with 50 percent cost share basis. These motorbikes help AITs travel long distances to other villages in order to perform insemination cases and also respond in a timely manner to urgent requests made by farmers.

"I am able to provide timely insemination services in my village and neighborhoods with Dairy Project's motorbike. I have inseminated about 200 animals out of which around 130 animals have conceived. Total conception rate is about 65%", shares Khawar.

Al Training has given him a steady source of income; Khawar earns a profit of PKR 29,000, on an average, per month. With better income resource, he is now able to spend on better quality healthcare, education and improved living standards for his family.

The overall aim is to ensure that through better breeding, farmers are able to increase their milk production and incomes. With the extensive follow-ups and support of Dairy Project's certified veterinarians, Khawar would like to further improve his skills. This will help him become self-sufficient at his dairy farm.

"With improved knowledge, skills and follow up support, I am committed to establish my own farm in future. With the help of Dairy Project team, I have access to good quality semen and developed strong market linkages overtime, which will be helpful for my dairy farm." remarks Khawar.







http://www.dairyproject.org.pk/

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